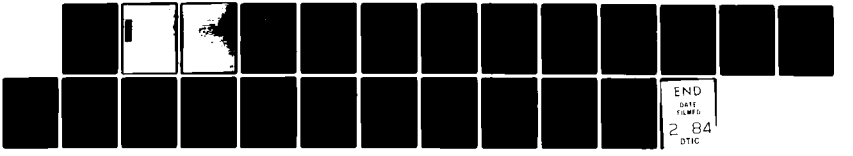
AD-A137 346 19319A MLRS MISSILE NUMBER 337 334 332 333 352 335 1/1
ROUND NUMBER 528/DL-43..(U) ARMY ELECTRONICS RESEARCH
AND DEVELOPMENT COMMAND WSMR NM ATM.. D C KELLER
UNCLASSIFIED NOV 83 ERADCOM/ASL-DR-1327 F/G 4/2 NL



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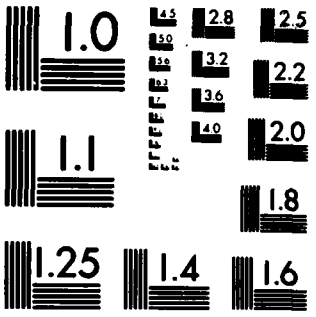

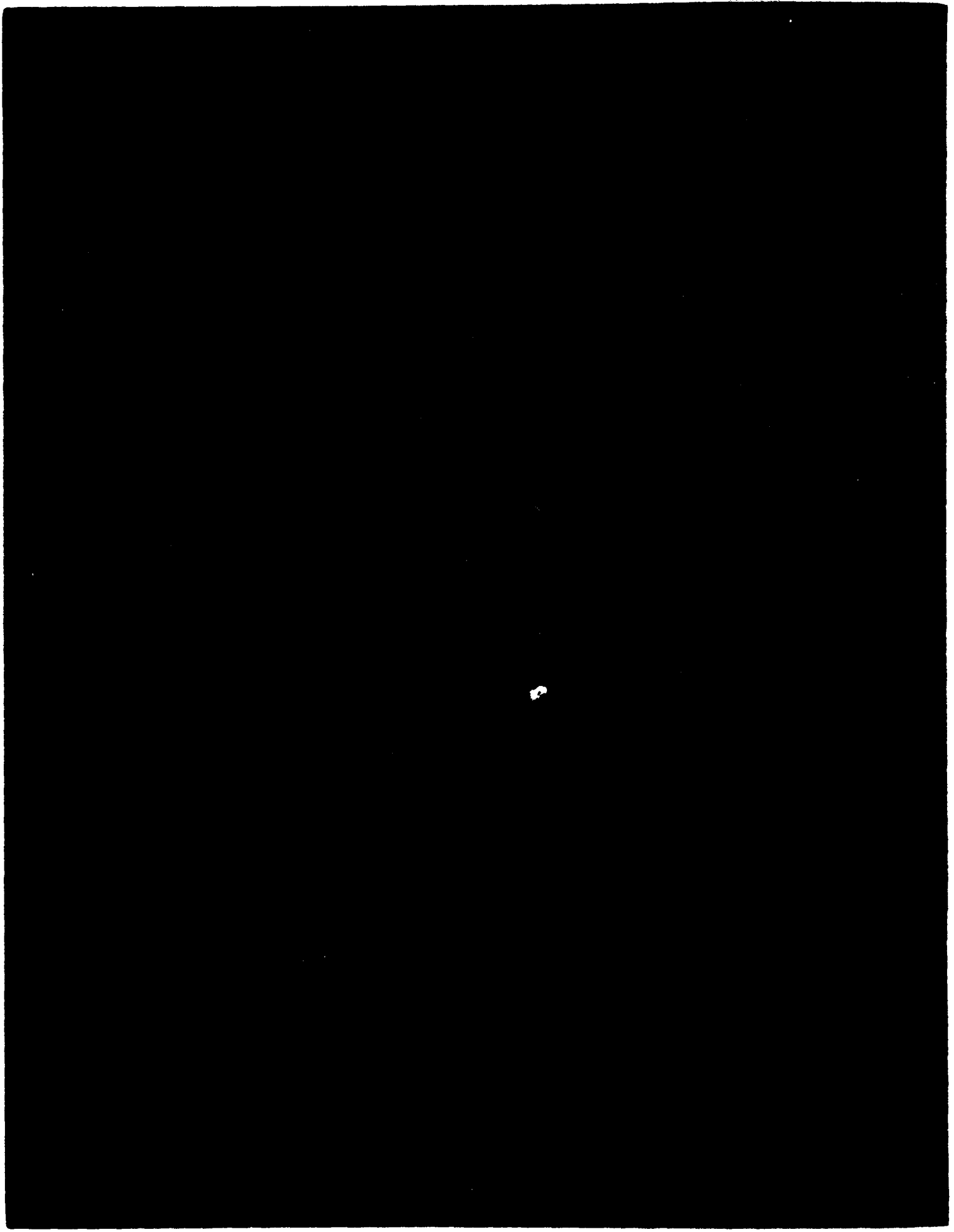

REPORT DOCUMENTATION PAGE

READ INSTRUCTIONS BEFORE COMPLETING FORM

1. REPORT NUMBER: DR-1327	2. GOVT ACCESSION NO.
3. RECIPIENT'S CATALOG NUMBER	
4. TITLE (and Subtitle): 19319A MLRS Missile Number 337, 334, 332, 333, 352, 335 Round Number 528/DL-43 thru 533/DL-48	5. TYPE OF REPORT & PERIOD COVERED
	6. PERFORMING ORG. REPORT NUMBER
7. AUTHOR(s): White Sands Meteorological Team	8. CONTRACT OR GRANT NUMBER(s): DA Task 1F665702D127-02
9. PERFORMING ORGANIZATION NAME AND ADDRESS	10. PROGRAM ELEMENT, PROJECT, TASK AREA & WORK UNIT NUMBERS
11. CONTROLLING OFFICE NAME AND ADDRESS: US Army Electronics Research & Development Cmd Atmospheric Sciences Laboratory White Sands Missile Range, New Mexico 88002	12. REPORT DATE: 14 November 1983
	13. NUMBER OF PAGES: 21
14. MONITORING AGENCY NAME & ADDRESS (if different from Controlling Office): US Army Electronics Research and Development Cmd Adelphi, MD 20783	15. SECURITY CLASS. (of this report): UNCLASSIFIED
	15a. DECLASSIFICATION/DOWNGRADING SCHEDULE

16. DISTRIBUTION STATEMENT (of this Report)

17. DISTRIBUTION STATEMENT (of the abstract entered in Block 20, if different from Report)

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18. SUPPLEMENTARY NOTES

19. KEY WORDS (Continue on reverse side if necessary and identify by block number)

20. ABSTRACT (Continue on reverse side if necessary and identify by block number)

Meteorological data gathered for the launching of the 19319A MLRS, Missile Number 337, 334, 332, 333, 352, 335, Round Number 528/DL-43 are presented in tabular form.

DD FORM 1 JAN 73 1473 EDITION OF 1 NOV 65 IS OBSOLETE

UNCLASSIFIED

SECURITY CLASSIFICATION OF THIS PAGE (When Data Entered)

CONTENTS PAGE

INTRODUCTION

19319A MLRS, Missile Numbers 337, 334, 332, 333, 352, and 335, Round Numbers 528/DL-48 Thru 533/DL-48, were launched from LC-33, White Sands Missile Range (WSMR), New Mexico, at 1547:20, 1547:24, 1547:29, 1547:33, 1547:38 and 1547:42 MST, 14 Nov 83. The scheduled launch times were 1545 MST iwth a 4.5 second separation.

DISCUSSION

Meteorological data were recorded and reduced by the White Sands Meteorological Team, Atmospheric Sciences Laboraotry (ASL), White Sands Missile Range, New Mexico. The data were obtained by the following methods:

1. Observations

a. Surface

(1) Standard surface observations to include pressure, temperature (°C), relative humidity, dew point (°C), density (gm/m^3), wind direction and speed, and cloud cover were made at the LC-33 Met Site at T-0 minutes.

(2) Monitor of wind speed and direction from one anemometer was provided in the launch control room.

b. Upper Air

(1) Low level wind data were obtained from pilot-balloon observations at:

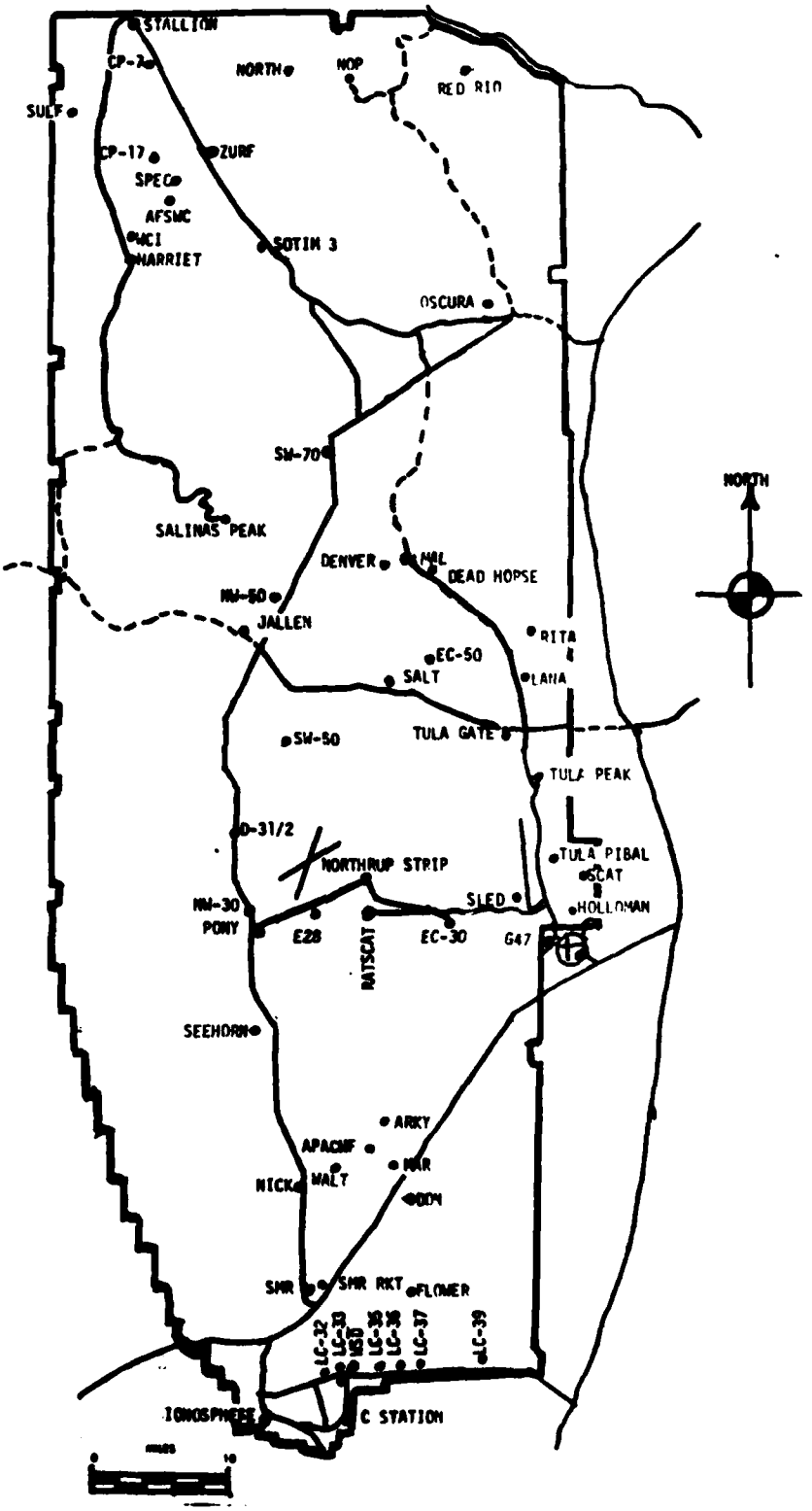
SITE AND ALTITUDE
LC-33 2 km
DON 2 km

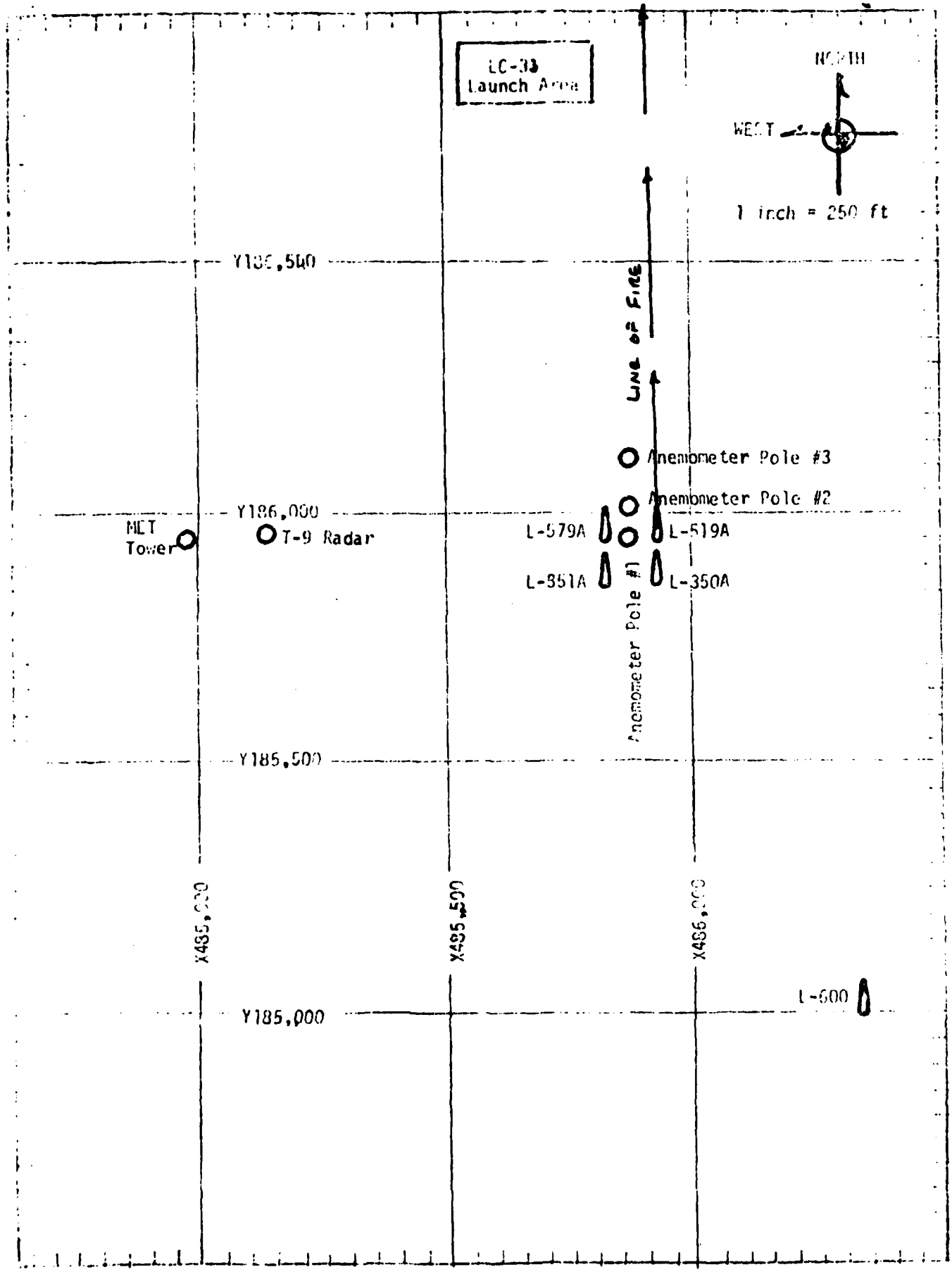
(2) Air structure data (rawinsonde) were collected at the following Met Sites.

SITE AND TIME
LC-37 1400 MST
WSD 1500 MST
LC-37 1545 MST

Accession For	
NTIS GRA&I	X
DTIC TAB	☐
Unannounced	☐
Justification	
By	
Distribution/	
Availability Codes	
Dist	Avail and/or Special
A-1	23

WSMR METEOROLOGICAL SITES




LC-39
Launch Area
NORTH
WEST
1 inch = 250 ft
Y186,500
LINE OF FIRE
Anemometer Pole #3
Anemometer Pole #2
Y186,000
MET
Tower
T-9 Radar
L-579A
L-519A
L-351A
L-350A
Anemometer Pole #1
Y185,500
X485,000
X485,500
X486,000
L-600
Y185,000

PROJECT SURFACE OBSERVATION

TABLE 1 STATION LC-33

DATE 14 (DAY) Nov (MONTH) 1983 (YEAR) X= 484,982.64 Y= 185,957.73 H= 3995.00

TIME M S T	PRESSURE mbs	TEMPERATURE °F	TEMPERATURE °C	DEW POINT °F	DEW POINT °C	RELATIVE HUMIDITY %	DENSITY gm/m³	WIND DIRECTION degs Tn	WIND SPEED kts	WIND CHARACTER kts	VISIBILITY
1548	876.4		21.2		-0.4	23		300	11		50

OBSTRUCTIONS TO VISIBILITY	CLOUDS 1st LAYER AMT	1st LAYER TYPE	1st LAYER HGT	2nd LAYER AMT	2nd LAYER TYPE	2nd LAYER HGT	3rd LAYER AMT	3rd LAYER TYPE	3rd LAYER HGT	REMARKS
	0	Cu	5,500	0	Sc	13,000				H ALODS

PSYCHROMETRIC COMPUTATION

TIME: MST	1548		
DRY BULB TEMP.	21.2		
WET BULB TEMP.	10.0		
WET BULB DEPR.	-0.4		
DEW POINT	23		
RELATIVE HUMID.			

TABLE 2

T-TIME PILOT-BALLOON MEASURED WIND DATA

DATE 14 November 1983

SITE: LC-33
TIME: 1548 MST
WSTM COORDINATES:
X= 484,837.34
Y= 184,124.44
H= 3,975.57

LAYER MIDPOINT METERS AGL	DIRECTION DEGREES	SPEED KNOTS
SURFACE	300	11
150	321	12
210	319	13
270	319	13
330	319	13
390	317	12
500	312	12
650	308	13
800	306	12
950	304	10
1150	302	14
1350	292	17
1550	294	16
1750	301	14
2000	MISG	

Data obtained from a Double Theodolite Tracked pilot-balloon observation

SITE: DON
TIME 1549 MST
WSTM COORDINATES:
X= 511,988.37
Y= 247,396.36
H= 3,996.83

LAYER MIDPOINT METERS AGL	DIRECTION DEGREES	SPEED KNOTS
SURFACE	350	03
150	332	06
210	329	07
270	326	07
330	324	08
390	319	08
500	310	10
650	303	10
800	300	12
950	300	13
1150	308	12
1350	315	15
1550	312	18
1750	310	20
2000	310	26

Data obtained from a Single Theodolite Tracked pilot-balloon observation.

Table 3

AIMING AND T-TIME COMPUTER MET MESSAGE DATA
14 November 1983

LC-37 1400 MST		WSD 1500 MST		LC-37 1545 MST	
METCM1324063		METCM1324064		METCM1324063	
142100124873		142200122876		142280124874	
00480012	29500873	00462008	29640876	00480008	29430874
01510016	29340863	01534018	29480865	01512010	29440864
02520015	29060838	02523012	29240841	02542015	29170839
03529016	28650799	03534012	28870802	03530014	28760800
04551012	28210753	04582007	28370756	04525012	28260754
05550020	27790708	05582010	27850711	05546012	27800709
06543037	27780666	06580018	27400669	06556022	27430667
07532042	27550627	07534044	27460628	07546042	27420627
08523047	27230589	08535045	27350590	08547047	27270589
09528052	26850553	09543046	27010555	09546049	26920553
10524051	26650519	10534047	26600520	10540050	26540519
11518057	26300486	11522050	26230488	11523051	26230486
12521064	25700441	12525054	25720442	12524061	25710441

STATION ALTITUDE 4051.47 FT MSL
14 NOV. 63 1406 HRS MST
ASCENSION NO. 165

SIGNIFICANT LEVEL DATA
31 JUL 0105
LC-37

GEODETIC COORDINATES
32.40175 LAT DEG
106.31232 LON DEG

Table 4

PRESSURE MILLIBARS	GEOMETRIC ALTITUDE MSL FEET	TEMPERATURE AIR DEGREES CENTIGRADE	TEMPERATURE DEWPOINT DEGREES CENTIGRADE	REL.HUM. PERCENT
873.2	4051.4	21.1	.9	26.0
856.6	4593.6	18.6	-3.5	22.0
850.0	4810.9	18.0	-4.0	22.0
786.4	6968.8	11.4	-5.1	31.0
752.6	8023.7	9.8	-5.8	35.0
70[illegible].2	9805.1	3.9	-8.1	41.0
700.0	10115.9	3.5	-8.5	41.0
691.6	10437.7	3.1	-10.8	35.0
686.4	10973.8	5.1	-16.6	19.0
661.5	11628.0	4.4	-16.5	17.0
594.1	14301.3	.1	-19.0	22.0
571.8	15478.5	-3.1	-20.3	25.0
546.2	16664.7	-5.8	-18.1	37.0
521.8	17890.3	-6.5	-21.2	30.0
509.0	18933.5	-8.7	-23.5	29.0
456.1	21251.4	-14.2	-32.2	20.0
406.0	24476.0	-22.3	-37.3	24.0

STATION ALTITUDE 4051.37 FEET MSL
14 NOV. 63 1400 HRS MST
ASCENSION NO. 165

UPPER AIR DATA
3140100165
LC-37

GEODETIC COORDINATES
32.40175 LAT DEG
106.31252 LON DEG

Table 5

GEOMETRIC ALTITUDE MSL FEET	PRESSURE MILLIBARS	TEMPERATURE AIR DEGREES	TEMPERATURE DEWPOINT CENTIGRADE	REL. HUM. PERCENT	DENSITY GM/CUBIC METER	SPEED OF SOUND KNOTS	WIND DATA DIRECTION DEGREES(TN)	WIND DATA SPEED KNOTS	INDEX OF REFRACTION
4051.4	873.2	21.1	.9	26.0	1030.9	669.2	270.0	12.0	1.000258
4500.0	859.4	19.0	-2.7	22.7	1022.5	666.7	277.8	12.8	1.000250
5000.0	844.2	17.4	-4.0	22.6	1010.1	664.3	285.5	13.8	1.000245
5500.0	829.2	15.9	-4.1	24.9	997.3	663.0	291.9	15.1	1.000243
6000.0	814.3	14.4	-4.4	27.9	984.7	661.3	294.6	14.7	1.000240
6500.0	799.8	12.8	-4.7	29.0	972.3	659.5	298.0	15.5	1.000237
7000.0	785.5	11.3	-5.1	31.1	960.0	657.7	300.7	16.7	1.000233
7500.0	771.3	10.1	-5.4	33.0	946.7	656.3	303.3	15.5	1.000230
8000.0	757.3	8.9	-5.8	34.9	933.6	654.9	309.2	12.0	1.000227
8500.0	743.3	7.5	-6.4	36.6	921.0	653.3	312.3	12.2	1.000223
9000.0	729.7	6.1	-7.0	38.3	908.5	651.6	312.2	14.4	1.000220
9500.0	716.3	4.7	-7.7	40.0	896.3	650.0	311.0	17.6	1.000216
10000.0	703.0	3.6	-8.4	41.6	883.3	648.7	308.6	22.3	1.000213
10500.0	690.0	3.4	-11.4	32.7	868.0	648.3	307.3	27.4	1.000206
11000.0	677.2	5.0	-16.3	18.7	847.4	650.0	306.2	32.7	1.000197
11500.0	664.7	4.5	-18.1	17.3	833.2	649.4	305.2	35.9	1.000193
12000.0	652.3	3.8	-19.5	17.7	819.8	648.6	304.2	38.5	1.000190
12500.0	640.1	3.0	-18.6	18.6	806.6	647.7	302.0	39.7	1.000187
13000.0	628.2	2.2	-18.7	19.6	794.1	646.7	299.9	40.9	1.000184
13500.0	616.4	1.4	-18.8	20.5	781.5	645.8	297.6	42.6	1.000181
14000.0	604.9	.6	-18.9	21.4	769.2	644.8	295.9	44.3	1.000178
14500.0	593.6	-.4	-19.2	22.5	757.6	643.6	294.5	45.2	1.000176
15000.0	582.3	-1.8	-19.8	23.6	747.0	642.0	293.3	45.8	1.000173
15500.0	571.3	-3.1	-20.2	25.2	736.6	640.4	293.6	47.0	1.000170
16000.0	560.4	-4.3	-19.1	39.3	725.5	639.1	294.8	48.8	1.000169
16500.0	549.7	-5.4	-18.3	35.3	714.5	637.8	298.2	54.0	1.000167
17000.0	539.1	-6.0	-18.4	35.1	702.3	637.1	298.3	55.9	1.000164
17500.0	528.8	-6.3	-20.1	32.2	689.6	636.7	297.0	55.3	1.000160
18000.0	518.5	-6.7	-21.4	29.9	677.5	636.1	294.8	52.8	1.000157
18500.0	508.5	-7.8	-22.5	29.4	667.1	634.4	293.4	50.4	1.000154
19000.0	498.7	-8.9	-23.7	28.7	655.9	633.6	292.3	50.7	1.000151
19500.0	488.9	-10.0	-25.5	26.8	646.9	632.1	291.5	53.8	1.000148
20000.0	479.3	-11.2	-27.4	24.9	637.2	630.6	291.9	59.0	1.000145
20500.0	469.9	-12.4	-29.2	22.9	627.6	629.2	292.1	64.0	1.000143
21000.0	460.7	-13.6	-31.2	21.0	618.1	627.7	292.5	64.9	1.000140
21500.0	451.5	-14.8	-32.5	20.3	608.7	626.3	292.9	65.9	1.000138
22000.0	442.4	-16.1	-33.3	20.9	599.3	624.7	293.2	63.5	1.000136
22500.0	433.5	-17.3	-34.1	21.5	590.2	623.2	293.5	60.9	1.000133
23000.0	424.8	-18.6	-34.9	22.2	581.1	621.7	293.9	59.8	1.000131
23500.0	416.2	-19.8	-35.7	22.8	572.3	620.1			1.000129

UPPER AIR DATA
3380120165
LC-37

STATION ALTITUDE 4051.37 FEET MSL
14 NOV. 83 1606 HRS MST
ASCENSION NO. 105

GEODETIC COORDINATES
32.40175 LAT DEG
106.31232 LON DEG

Table 5 (cont'd)

GEOMETRIC ALTITUDE MSL FEET	PRESSURE MILLIBARS	TEMPERATURE AIR DEGREES CENTIGRADE	TEMPERATURE DEWPOINT DEGREES CENTIGRADE	REL.HUM. PERCENT	DENSITY GM/CUBIC METER	SPEED OF SOUND KNOTS	WIND DATA DIRECTION DEGREES(TN)	WIND DATA SPEED KNOTS	INDEX OF REFRACTION
24000.0	407.8	-21.1	-36.5	23.4	563.5	618.0			1.000127

STATION ALTITUDE 9091.37 FEET MSL
14 NOV. 83 1400 GMT MST
ASCENSION NO. 165

MANDATORY LEVELS
31.0913.0165
LC-37

GEODETIC COORDINATES
32.4017S LAT (DD
106.3123, LON (DD

Table 6

PRESSURE MILLIBARS	GEOPOTENTIAL FEET	TEMPERATURE AIR DEGREES CENTIGRADE	TEMPERATURE DEWPOINT CENTIGRADE	REL. HUM. PERCENT	WIND DATA DIRECTION DEGREES(TN)	WIND DATA SPEED KNOTS
850.0	4807.	10.0	-4.0	22.	282.7	13.4
809.3	6492.	12.9	-4.7	29.	298.0	15.4
750.0	8254.	8.2	-5.1	36.	310.8	12.1
700.0	10106.	3.5	-8.5	41.	308.5	23.4
650.0	12093.	3.7	-18.5	10.	303.8	38.7
600.0	14201.	.2	-19.0	22.	295.3	44.9
550.0	16465.	-5.4	-18.3	35.	298.0	53.8
500.0	18907.	-8.7	-23.5	24.	292.4	50.3
450.0	21554.	-15.0	-32.7	20.	292.9	65.8
400.0	24435.	-22.3	-37.3	24.		

SIGNIFICANT LEVEL DATA
31 0042 0557
WHITE SANDS

STATION ALTITUDE 3989.00 FEET MSL
18 NOV. 83 1500 MST
ASCENSION NO. 557

GEODETIC COORDINATES
32.40045 LAT DEG
106.37033 LON DEG

Table 7

PRESSURE MILLIBARS	GEOMETRIC ALTITUDE MSL FEET	TEMPERATURE AIR DEGREES CENTIGRADE	TEMPERATURE DEWPOINT DEGREES CENTIGRADE	REL.HUM. PERCENT
874.5	3989.0	21.5	1.2	26.0
866.3	4354.3	20.6	-.7	24.0
854.1	4689.9	19.4	-1.7	24.0
850.0	4825.6	19.4	-1.1	25.0
804.5	6365.4	15.2	-3.6	27.0
700.0	10156.9	3.5	-5.7	51.0
671.3	11267.1	.1	-7.2	58.0
650.2	12197.2	-.8	-9.6	51.0
641.3	12470.2	.9	-15.5	28.0
624.5	13171.4	1.1	-21.2	17.0
614.0	13620.3	2.2	-19.6	18.0
557.1	16176.2	-3.0	-21.2	23.0
500.0	18955.8	-9.9	-22.4	35.0
483.3	19915.3	-11.5	-22.6	39.0
467.7	20640.8	-12.8	-27.4	28.0
421.8	23203.6	-18.7	-33.4	26.0
400.0	24495.8	-22.4	-34.8	31.0

STATION ALTITUDE 3989.0 FEET [illegible]
19 NOV. 55   1500 MST
ASCENSION NO. 557

[illegible]
[illegible]
WHITE SANDS

GEODETIC COORDINATES
32.40093 LAT DEG
106.37033 LONG DEG

Table 8

GEOMETRIC ALTITUDE MSL FEET	PRESSURE MILLIBARS	TEMPERATURE AIR DEGREES CENTIGRADE	TEMPERATURE DEWPOINT DEGREES CENTIGRADE	REL. HUM. PERCENT	DENSITY GM/CUBIC METER	SPEED OF SOUND KNOTS	WIND DATA DIRECTION DEGREES(TN)	WIND DATA SPEED KNOTS	INDEX OF REFRACTION
3989.0	875.5	21.5	1.2	26.0	1032.1	669.7	260.0	8.0	1.000259
4000.0	875.2	21.5	1.2	25.9	1031.6	669.7	260.2	8.0	1.000259
4500.0	859.9	20.1	-1.1	24.0	1019.0	667.9	268.7	7.9	1.000252
5000.0	844.7	18.9	-1.4	25.2	1005.0	666.6	277.1	8.0	1.000248
5500.0	829.5	17.6	-2.2	25.9	992.0	665.0	285.0	8.3	1.000244
6000.0	815.1	16.2	-3.0	26.5	979.1	663.4	292.4	8.8	1.000240
6500.0	800.6	14.8	-3.0	27.8	966.4	661.8	298.9	9.3	1.000237
7000.0	786.0	13.2	-3.5	31.0	953.9	660.0	304.5	9.7	1.000234
7500.0	771.7	11.7	-3.5	34.2	941.6	658.3	309.8	9.0	1.000232
8000.0	757.7	10.2	-3.7	37.3	929.5	656.5	315.9	8.4	1.000229
8500.0	743.9	8.6	-4.0	40.5	917.6	654.7	322.8	7.9	1.000226
9000.0	730.4	7.1	-4.4	43.7	905.9	652.9	327.0	8.4	1.000223
9500.0	717.1	5.5	-4.9	46.8	894.4	651.1	328.4	9.5	1.000220
10000.0	704.0	4.0	-5.5	50.0	883.1	649.3	329.6	10.6	1.000217
10500.0	691.0	2.4	-6.1	53.2	871.6	647.4	327.2	12.8	1.000214
11000.0	678.1	.9	-6.8	56.3	860.2	645.6	324.2	15.6	1.000210
11500.0	665.4	-.1	-7.8	56.1	847.4	644.3	318.6	20.5	1.000206
12000.0	652.9	-.7	-9.3	51.9	833.3	643.6	312.6	28.1	1.000201
12500.0	640.6	.4	-15.7	27.5	813.4	645.3	307.4	35.2	1.000190
13000.0	628.6	1.1	-19.5	19.7	798.0	645.4	302.5	41.7	1.000184
13500.0	616.8	1.9	-20.0	17.7	780.6	646.4	299.3	44.6	1.000180
14000.0	605.2	1.4	-19.6	18.7	767.2	645.6	297.4	45.2	1.000177
14500.0	593.8	.4	-20.0	19.7	755.6	644.6	299.8	45.3	1.000175
15000.0	582.6	-.6	-20.3	20.7	744.1	643.4	302.2	46.1	1.000172
15500.0	571.6	-1.6	-20.7	21.7	732.8	642.2	304.5	47.3	1.000169
16000.0	560.8	-2.6	-21.0	22.7	721.7	641.0	305.2	47.0	1.000167
16500.0	550.1	-3.8	-21.2	24.6	711.0	639.6	305.6	46.4	1.000164
17000.0	539.5	-5.0	-21.3	26.6	700.5	638.1	304.2	45.3	1.000162
17500.0	529.1	-6.3	-21.5	28.7	690.2	636.7	301.7	44.0	1.000160
18000.0	518.9	-7.5	-21.7	30.9	680.1	635.2	[illegible]	44.2	1.000157
18500.0	508.9	-8.8	-22.1	33.0	670.1	633.7	296.6	46.5	1.000155
19000.0	499.1	-10.0	-22.4	35.2	660.2	632.2	294.5	48.8	1.000153
19500.0	489.4	-10.9	-22.5	37.5	649.6	631.1	293.6	51.5	1.000150
20000.0	479.8	-11.8	-23.6	36.5	639.0	630.0	292.7	54.2	1.000147
20500.0	470.3	-12.6	-26.5	29.9	628.4	629.0	293.2	54.8	1.000144
21000.0	461.0	-13.6	-28.3	27.7	618.5	627.8	293.6	55.4	1.000141
21500.0	451.8	-14.8	-29.4	27.3	608.9	626.3	295.0	55.3	1.000139
22000.0	442.8	-15.9	-30.6	26.9	599.4	624.9	296.4	54.9	1.000136
22500.0	433.9	-17.1	-31.7	26.5	590.1	623.5	296.5	53.9	1.000134
23000.0	425.3	-18.2	-32.9	26.2	581.0	622.1	296.5	53.3	1.000132

STATION ALTITUDE 5989.00 FEET SL
14 NOV. 83 1500 MST
ASCENSION NO. 557

UPPER AIR DATA
91800 20557
WHITE SANDS

GEODETIC COORDINATES
32.4004 S LAT DEG
106.3733 LONG DEG

Table 8 (cont'd)

GEOPOTENTIAL ALTITUDE MSL FEET	PRESSURE MILLIBARS	TEMPERATURE AIR DEGREES CENTIGRADE	DEWPOINT	REL.HUM. PERCENT	DENSITY GM/CUBIC METER	SPEED OF SOUND KNOTS	WIND DATA DIRECTION DEGREES(TN)	SPEED KNOTS	INDEX OF REFRACTION
23500.0	410.7	-19.5	-37.7	27.1	572.2	620.5	290.5	57.4	1.000130
24000.0	405.2	-21.0	-36.2	29.1	563.6	618.7			1.000128

STATION ALTITUDE 3989.00 FEET ASL
14 NOV. 85 1500 MST
ASCENSION NO. 057

[illegible] LEVELS
31400205 7
WHITE SANDS

GEODETIC COORDINATES
32.40042 LAT DEG
106.37033 LON DEG

Table 9

PRESSURE OR POTENTIAL		TEMPERATURE		REL.HU.	WIND DATA	
MILLIBARS	FEET	AIR DEGREES CENTIGRADE	DEWPOINT CENTIGRADE	PERCENT	DIRECTION DEGREES(TN)	SPEED KNOTS
850.0	4822.	19.4	-1.1	25.	274.1	6.0
800.0	6517.	14.7	-5.6	20.	299.1	9.3
750.0	8200.	9.3	-5.9	39.	319.8	8.1
700.0	10147.	3.5	-5.7	51.	329.9	10.9
650.0	12102.	-.8	-9.7	50.	311.7	29.8
600.0	14214.	1.0	-19.9	19.	298.5	45.2
550.0	16488.	-3.8	-21.2	24.	305.6	46.4
500.0	18929.	-9.0	-22.4	35.	294.7	48.5
450.0	21572.	-15.0	-29.6	27.	295.3	55.2
400.0	24455.	-22.4	-34.8	31.		

1545 MST

Table 10

PRESSURE MILLIBARS	PRESSURE ALTITUDE MSL FEET	TEMPERATURE AIR DEGREES	TEMPERATURE DEW POINT CENTIGRADE	RELATIVE HUMIDITY PERCENT
873.9	4351.4	20.2	3.4	33.0
869.9	4391.1	21.5	-3.6	18.0
856.0	4533.0	19.1	-4.4	20.0
753.3	5772.3	8.7	-5.9	35.0
700.0	6515.3	3.2	-5.9	51.0
670.9	11043.2	.7	-6.6	58.0
671.8	11284.3	.2	-7.5	55.0
640.9	12113.9	.7	-15.7	28.0
638.0	12204.7	1.0	-21.9	10.0
611.1	13040.7	.5	-22.4	10.0
611.8	13711.0	1.0	-21.9	10.0
581.1	15064.3	-1.4	-20.9	10.0
574.2	15352.7	-1.3	-20.8	10.0
534.8	17021.9	-5.9	-23.2	24.0
500.0	18680.5	-9.9	-24.1	30.0
488.8	19617.4	-11.4	-24.1	34.0
478.1	20572.4	-11.4	-27.4	20.0
435.7	22791.0	-16.8	-32.5	24.0
400.0	24981.3	-22.2	-35.7	28.0

[illegible] 1545 MST

Table 11

ALTITUDE (MSL FEET)	PRESSURE (MILLIBARS)	AIR TEMPERATURE DEGREES CENTIGRADE	DEWPOINT TEMPERATURE	[illegible] PERCENT	[illegible] SPEED (KNOTS)	WIND DATA DIRECTION DEGREES(TRUE)	WIND DATA SPEED KNOTS	[illegible] REFRACTIVITY
500.0	957.9	20.2	[illegible]	53.0	1034.3	060.4	270.0	8.0	1.000265
750.0	[illegible]	20.4	-1.0	18.9	1018.0	060.1	279.3	9.0	1.000247
1000.0	898.9	18.6	-0.3	20.7	1007.0	060.1	287.3	10.4	1.000244
1250.0	[illegible]	17.0	-0.2	23.0	998.2	060.3	293.3	11.9	1.000242
1500.0	852.3	15.5	-0.3	25.2	991.0	060.5	297.9	13.6	1.000239
1750.0	828.4	13.9	-0.5	27.1	985.3	060.6	300.2	14.8	1.000235
2000.0	805.1	12.4	-0.6	29.7	957.1	059.0	298.6	14.4	1.000233
2250.0	782.6	10.8	-0.6	30.8	945.2	057.1	296.0	14.1	1.000230
2500.0	760.8	9.3	-0.7	30.2	933.4	055.3	292.6	13.0	1.000227
2750.0	739.8	7.8	-0.7	32.6	921.1	053.7	287.3	11.9	1.000224
3000.0	719.5	6.4	-0.7	41.7	910.6	052.1	280.0	11.0	1.000222
3250.0	699.8	5.0	-0.7	45.7	902.3	050.4	280.0	10.6	1.000219
3500.0	680.8	3.6	-0.9	49.9	896.2	048.6	278.0	11.0	1.000216
3750.0	662.4	2.2	-1.2	53.7	892.2	047.2	272.9	13.9	1.000214
4000.0	644.6	.8	-1.6	57.7	890.3	046.5	271.4	16.3	1.000211
4250.0	627.4	.3	-2.0	47.1	888.9	044.6	272.3	25.1	1.000203
4500.0	610.8	.6	-10.3	31.6	888.0	043.8	271.3	31.6	1.000195
4750.0	594.8	.9	-20.3	19.0	887.5	045.2	270.4	37.9	1.000187
5000.0	579.3	.8	-22.1	16.0	887.9	048.0	269.4	42.1	1.000183
5250.0	564.4	.6	-22.3	16.0	888.3	048.6	268.2	45.4	1.000180
5500.0	550.0	.5	-22.4	16.0	888.9	049.0	268.0	46.2	1.000177
5750.0	536.1	-.4	-22.1	16.0	889.9	048.6	268.8	46.5	1.000174
6000.0	522.7	-1.3	-22.6	16.0	890.0	047.6	267.6	45.9	1.000171
6250.0	509.8	-1.8	-22.7	16.0	890.1	046.2	267.9	46.0	1.000169
6500.0	497.3	-3.1	-22.5	17.1	890.7	044.4	267.2	47.4	1.000166
6750.0	485.3	-4.5	-22.2	21.3	891.5	043.0	268.0	48.0	1.000164
7000.0	473.7	-5.8	-22.2	23.9	892.5	042.2	268.0	48.8	1.000161
7250.0	462.5	-6.9	-22.3	25.1	893.6	043.4	268.4	51.1	1.000159
7500.0	451.7	-7.4	-22.3	27.0	894.8	043.7	268.6	50.4	1.000157
7750.0	441.3	-9.0	-22.3	29.6	896.4	043.4	269.1	50.3	1.000154
8000.0	431.2	-10.0	-22.4	30.4	898.0	043.1	269.6	50.6	1.000152
8250.0	421.5	-11.1	-22.1	33.5	899.8	043.1	269.5	52.3	1.000150
8500.0	412.2	-11.4	-22.0	36.8	901.8	043.0	269.1	55.2	1.000146
8750.0	403.2	-12.4	-22.0	38.8	903.6	042.2	269.4	57.6	1.000143
9000.0	394.6	-13.0	-22.0	38.6	905.9	042.0	269.6	58.2	1.000141
9250.0	386.3	-14.7	-22.4	36.4	908.4	042.4	269.3	60.5	1.000138
9500.0	378.3	-15.9	-21.7	29.2	909.1	042.6	269.0	60.7	1.000136
9750.0	370.6	-17.1	-19.7	20.2	909.9	042.5	269.3	60.2	1.000134
10000.0	363.2	-18.4	-21.2	16.2	910.4	041.0	269.6	59.6	1.000132
10250.0	356.0	-19.7	-21.1	16.1	912.1	040.2			1.000129

1545 MST

Table 11 (cont'd)

GEOPOTENTIAL PRESSURE ALTITUDE FEET	TEMPERATURE AIR DEGREES CENTIGRADE		RELATIVE HUMIDITY PERCENT	SPEED OF SOUND METERS	WIND DATA DIRECTION DEGREES(TN)	SPEED KNOTS	INDEX OF REFRACTION
21000.0	-21.0	-99.9	27.1	963.4	*****		1.000127

STATION ELEVATION 4091.37 FEET MSL
19 NOV. 83 1545 MST
ASCENSION RATE 500 FPM

SIGNIFICANT LEVELS
TROPOPAUSE
LEVEL

GEODETIC COORDINATES
32.4017° LATITUDE
106.3125° LONGITUDE

Table 12

PRESSURE MILLIBARS	HEIGHT FEET	TEMPERATURE AIR DEGREES CENTIGRADE	TEMPERATURE DEWPOINT DEGREES CENTIGRADE	RELATIVE HUMIDITY PERCENT	WIND DATA DIRECTION DEGREES(TN)	WIND DATA SPEED KNOTS
850.0	5033.	14.1	-4.4	20.	264.9	9.9
800.0	6523.	13.9	-4.5	25.	300.1	14.8
750.0	8050.	8.8	-5.8	36.	290.5	12.4
700.0	9613.	3.9	-5.9	51.	311.0	11.9
650.0	11210.	.7	-13.6	26.	311.1	35.0
600.0	14208.	.1	-22.7	10.	305.7	40.4
550.0	10477.	-4.5	-23.2	21.	300.8	40.9
500.0	19414.	-8.9	-24.1	30.	290.4	50.7
450.0	21557.	-14.9	-30.8	24.	294.4	60.5
400.0	24000.	-22.2	-35.7	26.		


ND
DATE